

SEPTEMBER 19, 1994 MORNING SESSION

1.1 Transcriptional and Post-Transcriptional Regulation

K P Gopinathan, INDIA (Convenor): Gene copy selection for expression in multigene family by RNA polymerase III.

P Couble, FRANCE (Convenor): Cellular and developmental tuning of silk protein gene expression.

P Chambon, FRANCE: Retinoic receptors.

M Muramatsu, JAPAN: Estrogen responsive finger protein: Transcriptional cascade of steroid hormone regulation.

E Whale, SWITZERLAND: RNA processing from the 3' end.

2.9 Molecular Basis of Ageing

M S Kanungo, INDIA (Convenor): Role of promoter genes in ageing process.

J Papaconstantinou, USA (Convenor): The effect of ageing on the acute phase response: The role of CIS- and trans-acting factors in age related changes of the acute phase response.

A Richardson, USA: The role of transcription factors in the age-related decline in the transcription of heat shock genes.

D Gershon, ISRAEL: Attenuation of the response to heat shock as a function of age can be attributed to alterations in the functions of the transcription factor, HSF.

A W Linnane, AUSTRALIA: The universality of bioenergetic disease and the ageing process.

S I S Rattan, DENMARK: Translational regulation, and post-translational modifications during ageing.

3.1 RNA Structure and Function

D P Burma, INDIA (Convenor): Ribosomal RNA-based model of translocation in protein synthesis

R Brimacombe, GERMANY: Mapping the functional centre of the ribosome.

L A Kirsebom, SWEDEN: Nucleotides on various tRNA precursors and in M1 RNA important for the location of the Escherichia coli RNase P cleavage site.

A E Dahlberg, USA: Probing the structure and function of Escherichia coli ribosomal RNA.

H Engelberg-Kulka, ISRAEL: Translational introns: A new regulatory mechanism in gene expression.

5.1 Molecular Basis of Tropical Diseases I

P R Mahadevan, INDIA (Convenor): Molecular mechanisms in relation to host-pathogen interactions in leprosy.

P J Brennan, USA (Convenor): The surface structures of mycobacteria: Their roles in the host response, their biogenesis and potential as drug targets.

M J Colston, UK: The genetics of pathogens; learning from mycobacteria.

J J Mekalanos, USA:

6.1 Hypersensitivity and Inflammatory Reactions-Molecular and Cellular Aspects

S V Gangal, INDIA (Convenor): Na⁺ and Ca⁺⁺ transport dysfunction in reactive airway diseases and their role in causing airway inflammation.

S J Ackerman, USA (Convenor): Molecular biology of the eosinophil and its mediators in health and disease.

M Capron, FRANCE: Antibody-dependent activation of eosinophils.

S Romagnani, ITALY: Human Th 1 and Th 2 cells: Role in disease and mechanisms of regulation.

P Venge, SWEDEN: Mechanisms of eosinophil function in inflammatory and allergic reactions.

J M Harlan, USA: Molecular mechanisms and pathologic consequences of phagocyte adhesion in inflammation.

7.1 Three Dimensional Structure of Proteins

M Vijayan, INDIA (Convenor): Quaternary structure and sugar specificity of legume lectins: Variability and invariance.

W A Hendrickson, USA (Convenor): Structural interactions of cell surface proteins.

J N Jansonius, SWITZERLAND: Substrate specificity in vitamin B₆ - dependent aminotransferases.

P Colman, AUSTRALIA: Structure and inhibitors of influenza virus neuraminidase.

T L Blundell, UK: The structure and function of pentraxins.

L N Johnson, UK: Glycogen phosphorylase and glycogen phosphorylase kinase: Structural studies.

8.1 Vitamins, Coenzymes and Carrier Proteins

P R Adiga, INDIA (Convenor): Structure, function and evolutionary conservation of riboflavin carrier proteins.

E W Miles, USA (Convenor): Crystallographic and kinetic studies of the tryptophan synthase $\alpha 282$ complex with a mutation in β subunit lysine-87 that binds pyridoxal phosphate.

G Schneider, SWEDEN: Probing enzymatic thiamine catalysis using protein crystallography and site-directed mutagenesis.

R Blomhoff, NORWAY: Vitamin A: Physiological and biochemical processing.

R Manohar, USA: The biochemistry and clinical significance of folate receptors.

M Nishikimi, JAPAN: Elucidation of genetic defects in L-gulonolactone oxidase involved in ascorbic acid biosynthesis.

9.1 Molecular Embryology

A J Rao, INDIA (Convenor): Regulation of endocrine function of human placenta.

T Maruo, JAPAN (Convenor): EGF and IGF-I as local regulators of human trophoblast proliferation and differentiation in early pregnancy.

S K Dey, USA: Ligand-receptor signalling of EGF-related growth factors in preimplantation embryo development and implantation.

J G Grudzinskas, UK: Biochemical screening of fetal aneuploidies in the first trimester.

R M Roberts, USA: Specific gene expression in developing trophoblast of preimplantation embryos .

J F Strauss, USA: Lessons for human embryology from trophoblast cells.

10.1 Neural Receptors

S K Sharma, INDIA (Convenor): Purification and reconstitution of delta opioid receptor.

M Rodbell, USA (Convenor): Signal transduction and the cytoskeletal network. G proteins have properties of cytoskeletal proteins.

D Lancet, ISRAEL: Olfaction: Receptor diversity, genome mapping and signalling dynamics.

M Goodman, USA: An integrated approach for the design of novel somatostatins and opioids.

B Kieffer, FRANCE: The molecular biology of opioid receptors.

C Fraser, USA: Expression of muscarinic acetyl choline receptors: Regulation by changes in mRNA stability.

M Satoh, JAPAN: Opioid receptors: Structures, distributions and functions.

11.1 Membrane Bioenergetics/Photosynthesis

P V Sane, INDIA (Convenor): Historical developments in structure and function relationship of chloroplast membranes.

G Hauska, GERMANY (Convenor): Quinol oxidation by the cytochrome PYbcPY-complexes-The central reaction of energy conserving electron transport chains.

J H Golbeck, USA: Biophysical studies of photosystem I: Spectroscopic characterization of mutants in the FX, FB and FA iron-sulfur clusters.

Y Shahak, ISRAEL: The initial step in anoxygenic photosynthesis.

B Andersson, SWEDEN: Proteolytic activities associated with photosystem II and its light harvesting apparatus.

SEPTEMBER 19, 1994 AFTERNOON SESSION

2.2 Plant-Microbe Interaction/Pathogenesis

G K Garg, INDIA (Convenor): Molecular basis of pathogenesis and recalcitrant resistance against alternaria blight in Brassica sp.

B B Biswas, INDIA (Convenor): Emerging strategies for making plants resistant to pathogens.

K Kohmoto, JAPAN: Host-specific toxins from alternaria pathogens: Biology and pathologys.

W Knogge, GERMANY: Plant disease resistance: Avirulence and resistance genes in plant infection.

D Peters, NETHERLANDS: The molecular biology of tomato spotted wilt virus and other tospoviruses.

H S Savithri, INDIA: Interference in PhMV RNA replication in tobacco by sense and antisense promoters.

3.2 DNA Topology and Chromatin Structure

M R S Rao, INDIA (Convenor): Histone H1 variants.

J O' Thomas, UK (Convenor): Chromatin, H1 and HMG1.

A Mirzabeckov, RUSSIA: Chromatin structure and protein composition of regulatory transcribed and inactive regions of genome.

A E Sippel, GERMANY: Chromatin domains constitute regulatory units for the control of eukaryotic genes.

D Tremethick, AUSTRALIA: Chromatin assembly and its role in controlling transcription.

5.2 Molecular Basis of Tropical Diseases II

I Nath, INDIA (Convenor): Recombinant LSR/A15 shows sequence specific T and B cell reactivity in leprosy.

M E Pattarrayo, COLUMBIA (Convenor):

A Sher, USA: Cytokine regulation of parasitic infections: Prospects for immunopharmacologie.

V K Vinayak, INDIA: Regulation of amoebic infection by cell surface associated molecules.

A O Pogo, USA: Human duffy glycoprotein: The malaria receptor is a novel class of erythrocyte transmembrane protein that is expressed in non-erythroid cells.

6.2 T Cells, MHC and Peptide Interaction in Immunology

VR Muthukaruppan, INDIA (Convenor):

M Zauderer, USA (Convenor): Functional motifs of T cell receptor ligands.

J Howard, UK: Peptide access to the endoplasmic reticulum and the loading of class I MHC molecules.

D H Margulies, USA: Molecular interactions of major histocompatibility complex class I molecules with peptides and T Cell receptors: Specificity and kinetics.

7.2 Enzyme Catalytic Mechanisms

N A Rao, INDIA (Convenor): Interactions at the active site of serine hydroxymethyltransferase.

K Soda, JAPAN (Convenor): Pyridoxal enzymes acting on D-amino acids: Stereochemical aspects of the reactions.

R Wever, NETHERLANDS: The reaction mechanism of novel vanadium haloperoxidases and structure of the prosthetic group.

M S Patel, USA: Probing the catalytic site of human pyruvate dehydrogenase.

C J O'Connor, NEW ZEALAND: Lamb lingual lipase- its potential as a food grade catalyst.

V Massey, USA: The reaction mechanisms of flavoprotein hydroxylases.

8.3 Biochemical Aspects of Nutritional Disorders

M S Bamji, INDIA (Convenor): Biochemical basis of skin lesions in vitamins B₂, or B₆ deficiency.

F Chytil, USA (Convenor): Molecular aspects of vitamin A action in normal and diseased states.

T Suda, JAPAN: The vitamin D function and its clinical implications.

T J Visser, NETHERLANDS: Iodine, selenium and thyroid hormone.

P A Price, USA: The functions of vitamin K-dependent proteins in extrahepatic tissues.

E H Morgan, SWITZERLAND: Biochemical aspects of iron deficiency.

9.3 Fertility Regulation I

N R Moudgal, INDIA (Convenor): On the development of a viable male contraceptive.

M Parvinen, FINLAND (Convenor): Regulation of the seminiferous epithelium by growth factors.

J Mather, USA: Activin, inhibin and follistatin: Paracrine regulators of reproductive function.

J C Herr, VIRGINIA: Update on primate immunogenicity and fertility tests of the testis-specific, intra-acrosomal sperm protein SP-10.

C Pineau, FRANCE: Germ cell control of sertoli cell function.

M R Sairam, CANADA: Hormone anti-idiotypic and receptor antibody approaches to fertility management.

9.5 Hormones, Growth Factors, Second Messenger and Receptors II

V K Moudgil, USA (Convenor): Modulation of progesterone receptor by phosphorylation, transformation and antiprogestins.

G Shyamala, USA (Convenor): Regulation of estrogen dependent gene expression.

R M Evans, USA:

M G Parker, UK: Mechanisms of action of oestrogen receptor agonists and antagonists.

H Rochefort, FRANCE: Estrogen regulated genes in breast cancer.

J R Tata, UK:

10.2 Signal Transduction in Neural Tissues

P S Sastry, INDIA (Convenor): Modulation of diacylglycerol kinase by polyunsaturated fatty acids and their oxidative metabolites in neural membranes.

K Mikoshiba, JAPAN: Inositol 1,4,5-trisphosphate receptor and Ca^{2+} signalling.

W H Gispen, NETHERLANDS:

L E Hokin, USA: Lithium increases glutamate release and, via activation of the NMDA receptor, inositol 1,4,5-Trisphosphate accumulation in Rhesus monkey and mouse cerebral cortex slices.

E Hansson, SWEDEN: Molecular mechanisms of glutamate induced astroglial swelling.

C P Downes, UK: Inositol phospholipid signalling pathways stimulated by neurotransmitters and neurotrophic factors in cell populations and single neurones.

11.2 Membrane Structure and Dynamics

C M Gupta, INDIA (Convenor): Generation and maintenance of membrane phospholipid asymmetry in mammalian erythrocytes.

P Chakrabarti, INDIA (Convenor): Functional significance of erythrocyte membrane abnormalities in chronic myelogenous leukemia.

P F Devaux, FRANCE: Proteins involved in the transmembrane distribution of phospholipids.

B de Kruijff, NETHERLANDS: Membrane structure and dynamics in protein insertion and translocation.

A J Schroit, USA: Lipid transport in human red blood cells.

D Chapman, UK: Recent spectroscopic studies of biomembrane systems.

R Blumenthal, USA: Molecular mechanisms of biological membrane fusion.

12.2 Science and Education in Developed and Developing Countries

P S Murthy, INDIA (Convenor):

L de Meis, BRAZIL (Convenor): The challenge of the education of biochemistry in developing countries.

C A Pasternak, UK: The Oxford international biomedical centre: A novel enterprise for post-graduate training.

G Inesi, USA: Developing trends in teaching biochemistry to medical students.

M A Rahman, PAKISTAN:

P M Bhargava, INDIA:

SEPTEMBER 20, 1994 MORNING SESSION

1.2 Transcriptional Regulation in Eukaryotes

G Padmanaban, INDIA (Convenor): Transcriptional regulation of CYP2 B₁/B₂ gene in rat liver.

R G Roeder, USA (Convenor): General initiation factors, activators and cofactors.

M Karin, USA: Signal transduction from membrane to nucleus: Regulation of AP-1 activity by protein phosphorylation.

B Wasylyk, FRANCE: Gene Regulation by Oncoproteins and Antioncoprotins.

R W Hanson, USA: Hormonal control of P-enolpyruvate carboxykinase gene transcription.

2.3 Plant-Microbe Interaction/Nitrogen fixation

H K Das, INDIA (Convenor): Regulation of transcription from the nifLA promoter of Klebsiella pneumoniae.

A Kondorosi, FRANCE (Convenor): Control of plant cell growth and nodule morphogenesis in Medicago by Rhizobium meliloti nod factors.

D P S Verma, USA: Signals and control of vesicular transport in biogenesis of the peribacteriod membrane in root nodules.

H P Spaink, NETHERLANDS: Molecular basis of the host specificity in the symbiosis between Rhizobium, bacteria and leguminous plants.

A Puhler, GERMANY: The synthesis of the Rhizobium meliloti exopolysaccharide EPSI and its role in the development of alfalfa nodules.

P Boistard, FRANCE: Regulation of the expression of nitrogen fixation genes of Rhizobium meliloti. The signal transduction pathway.

N J Brewin, UK: The use of mutations and monoclonal antibodies to analyse Rhizobium-legume cell surface interactions during pea nodule development.

2.4 Cell Cycle Control

S P Modak, INDIA (Convenor): Cell cycle regulation during the establishment of axial specificities in early development.

E Nigg, SWITZERLAND (Convenor): Cell cycle regulation in vertebrates.

J-J Lawrence, FRANCE: H1 histones and embryogenesis: Expression and regulation of histone H10 during early development of xenopus laevis.

T Hunt, UK:

C Lehner, GERMANY: The end of the mitotic proliferation in the Drosophila embryo: The role of cyclin E.

3.3 DNA Protein Recognition

D Chatterjee, INDIA (Convenor): Evidence for the direct interaction of stringent factor ppGpp with Escherichia coli RNA polymerase.

A Ishihama, JAPAN (Convenor): DNA-protein and protein-protein contacts in transcription activation.

H Bujard, GERMANY: Principles governing the controlled onset of transcription.

S Adhya, USA: Role of DNA looping in transcriptional regulation.

R H Ebright, USA: Mechanism of transcription activation by CAP: Identification and analysis of the target on RNA polymerase.

B Sarkar, CANADA: Zinc-finger transcription factor recognition of DNA: Effects of metal replacement and protein-protein dimerization interface.

C Wen-Wu, CHINA: Transcriptional regulation by the immediate early gene products of human cytomegalovirus.

5.3 Molecular Basis of Pathogenicity

A M Chakrabarty, USA (Convenor): Pseudomonas aeruginosa infection in cystic fibrosis: Molecular basis of signaling mechanisms.

E Z Ron, ISRAEL (Convenor): The diverse molecular mechanisms of Escherichia coli infection.

C T Caskey, USA: Trinucleotide repeat associated diseases.

R Rappuoli, ITALY: Differential regulation of virulence factors by the bvg locus of Bordetella pertussis.

C Bender, USA: Virulence genes in the plant pathogen Pseudomonas syringae.

6.3 Tumor Immunology

S G Gangal, INDIA (Convenor): Anti idiotypic antibodies to monoclonal antibodies directed to tumor associated antigens on squamous cell carcinomas of the oral cavity.

I Hellstrom, USA (Convenor): Antitumor activity of antibody-drug conjugates and immunomodulation.

S Ferrone, USA: Characterization of molecular mechanisms underlying abnormalities in HLA class I antigen expression by melanoma cells.

Y Samstag, GERMANY: Molecular basis of autonomous proliferation of human T cell tumors.

K Alpau, USA: Bispecific monoclonal antibody therapy.

A Khar, INDIA: Interleukin-12 activation of natural killer-mediated AK-5 tumor cell death leading to tumor regression.

7.3 Protein Folding and Engineering

P Balaram, INDIA (Convenor):

R N Perham, UK (Convenor):

K Kuwajima, JAPAN:

K Kirschner, SWITZERLAND:

S Niyogi, USA:

8.2 Intermediary Metabolism

A Ramaiah, INDIA (Convenor): Role of pH in the regulation of melanin biosynthesis.

E V Schaftingen, BELGIUM (Convenor): The regulatory protein of glucokinase.

G S Jagannatha Rao, USA: Regulation of Ascaris suum phosphofructokinase.

J C G Borron, SPAIN: Metabolism of 5,6-dihydroxyindole-2-carboxylic acid (DHICA), a central intermediate in mammalian melanin biosynthesis.

M Sugumaran, USA: New insights into melanogenesis and sclerotization.

H G Hers, BELGIUM: The mechanisms of blood glucose homeostasis.

9.2 Hormones, Growth Factors, Second Messenger and Receptors I

J Ramachandran, INDIA (Convenor): Receptor and ion channel diversity.

A Levitzki, ISRAEL (Convenor): Cellular signaling through ras and tyrosine kinases and their inhibition.

R D Kornberg, USA: Mechanism and regulation of RNA polymerase II transcription.

M Whiteway, CANADA: Genetic analysis of G protein function in yeast.

S Courtridge, GERMANY:

10.3 Molecular Aspects of Neuronal Maturation and Degeneration

K Subba Rao, INDIA (Convenor): Neuronal degeneration in aging and Alzheimer's disease.

P K Sarkar, INDIA (Convenor): Thyroid hormone and neuronal maturation.

N Hirokawa, JAPAN: Molecular architecture and function of the neuronal cytoskeleton in terms of cell morphogenesis and organelle transports.

J de Vellis, USA: Molecular control of neural cell survival and differentiation.

Y H Suh, KOREA: Molecular biology of Alzheimer's amyloid precursor protein.

Z Iqbal, USA: Genetic and biochemical changes in Cu-Zn superoxide dismutase: Relation to the onset of amyotrophic lateral sclerosis.

11.3 Membrane Transport-Channels, Pumps and Carriers

K R K Easwaran, INDIA (Convenor): Structural basis for carrier mediated transmembrane ion transport.

O Anderson, USA (Convenor): The role of lipids for membrane protein-function.

R E Koeppe II, USA: Co-ordinated studies of channel structure and function using the linear gramicidins.

F Conti, ITALY: Modelling the sodium-channel pore and its gating structures.

J-P Changeux, FRANCE: Functional organization of the nicotinic acetylcholine receptor: An allosteric membrane protein.

H R Kaback, USA: A passage to permease.

H Passow, GERMANY: Molecular biological studies on the anion transporter of the red blood cell membrane.

SEPTEMBER 20, 1994 AFTERNOON SESSION

1.5 DNA Recombination

K Muniyappa, INDIA (Convenor): Functions of nucleosomes and regulatory factors in homologous recombination.

S K Mahajan, INDIA (Convenor): On the role of recB, C, D enzyme in genetic recombination in Escherichia coli K-12.

S C West, UK: Genetic recombination catalysed by purified recombination proteins.

T Ogawa, JAPAN: Functions and structures of eukaryotic recombination proteins.

M Jayaram, USA: Mechanism of site-specific recombination: The FLP paradigm.

A Cohen, ISRAEL: Recombination-mediated repair of DNA double-strand breaks in Escherichia coli.

2.1 Homeobox and Pattern Formation

K VijayRaghavan, INDIA (Convenor): The patterning of muscles in Drosophila melanogaster.

E M Meyerowitz, USA (Convenor): Pattern formation in meristem and flower development.

R White, UK: Targets of homeotic gene control in Drosophila.

E Coen, UK: Molecular and genetic control of flower development.

G Ruvkun, USA: Generation of cell lineage asymmetry in C. elegans by homeodomain problems.

S Govind, USA: The dorsal-cactus complex in signal transduction and embryonic pattern formation in Drosophila.

B M-Oei, SINGAPORE: Bland, a putative-secreted protein with homology to serine proteases, plays a role in nerve and muscle development.

2.10 Biochemical Events in Programmed Cell Death and Apoptosis

L Fesus, HUNGARY (Convenor): Transglutaminase-catalyzed protein cross-linking in naturally occurring forms of cell death.

R Friis, SWITZERLAND (Convenor): Coincident expression of genes involved in hormone-dependent programmed cell death in the prostate and the mammary gland.

A Strasser, AUSTRALIA: The role of oncogenes and tumour suppressor genes in cell survival and neoplasia.

L Rao, USA: Regulation of P53 dependent apoptosis by the adenovirus transforming gene product.

S Nagata, JAPAN: The fas mediated apoptosis.

3.4 Novel DNA Structures and their Biological Implications

S K Brahmachari, INDIA (Convenor): Unusual DNA structures and regulation of gene expression.

C Helene, FRANCE (Convenor):

M F Kamenetskii, USA: Multistranded DNA structures.

P E Nielson, DENMARK: Peptide nucleic acid (PNA): A structural DNA mimic.

N C Seeman, USA: Properties and uses of branched DNA: Recombination and nanotechnology.

4.5 Gene Targeting

M R Capecchi, USA (Convenor): The role of hox genes in establishing our body plan.

A Berns, NETHERLANDS (Convenor): Mouse model systems to study the multistep process of tumorigenesis.

P Soriano, USA: Genetic analysis of tyrosine kinases in mice.

E F Wagner, AUSTRIA:

6.4 Autoimmunity

A K Abbas, USA (Convenor): Mechanisms of T cell tolerance and autoimmune reactions.

D W Mason, UK (Convenor): The role of T cells in the prevention of autoimmune disease.

V Kuchroo, USA: T-cell response to myelin antigens and development of selective immunotherapies for autoimmune diseases.

J Goverman, USA: Myelin basic protein-specific transgenic T Cells: Tools for dissecting autoimmune responses.

S K Datta, USA: Mechanisms of the pathogenic immune response in systemic autoimmune disease.

7.4 Regulation of Enzyme Activity

B-M Sjöberg, SWEDEN (Convenor): Deconvoluting the mechanism of ribonucleotide reductase by site-directed mutagenesis.

O Hayaishi, JAPAN: Prostaglandin D synthase: Structure and function.

H Kleinkauf, GERMANY: Total biosynthesis of complex metabolites by multienzyme systems.

T R Soderling, USA: Ca^{2+} /calmodulin-dependent protein kinase II: Regulation by an autoinhibitory domain.

W J Whelan, USA: Glycogenin: The key enzyme of glycogen biogenesis.

J P Klinman, USA: Generation of 6-hydroxy DOPA in enzyme active sites.

8.4 Drug Metabolism and Cytochrome P-450

K M Madhyastha, INDIA (Convenor): Chemical basis for toxicity mediated by R-(+)-pulegone and related compounds: Role of cytochrome P-450.

F P Guengerich, USA (Convenor): Chemical mechanisms of catalysis by cytochrome P-450 enzymes.

Y F Kuriyama, JAPAN: Ah receptor and molecular mechanisms of inducible expression of P-450 1A1 gene.

B S Master, USA: Structural determinants of arachidonic acid-metabolizing cytochromes P-450 of the CYP4A gene subfamily.

I C Gunsalus, USA: The variety and diversity among prokaryote P-450 systems.

J A Gustafsson, SWEDEN: Regulation of cytochrome P-450 in the brain.

9.4 Fertility Regulation II

G P Talwar, INDIA (Convenor): Immunological approaches to control of fertility and infectious diseases.

E E Beaulieu, FRANCE (Convenor):

M Misrahi, FRANCE: The LH/CG receptor: Structure and regulation.

I Fraser, AUSTRALIA: Biochemical mechanisms involved in endometrial bleeding with hormonal contraceptives.

H Croxatto, CHILE: The antifolliculotropic action of antiprogestins.

F Labrie, CANADA: Steroidogenic enzymes in peripheral target tissues: From molecular biology to control of cell growth.

11.4 Extracellular Matrix

K Datta, INDIA (Convenor): Phosphorylated form of hyaluronan binding protein: A molecular paradigm for signal transduction.

R Timpl, GERMANY (Convenor): Structure and function of basement membrane proteins.

K Yamada, USA: Fibronectin and integrins in cell adhesion, migration, and signal transduction.

D Heinegard, SWEDEN: Cartilage and bone matrix molecules with important roles in tissue function.

M van Der Rest, FRANCE:

B R Olsen, USA: Of mice and men with mutations in collagen genes.

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1.4 DNA Repair and Mutagenesis

S Mitra, USA (Convenor): Regulation of Alkylation damage repair in mammalian genomes.

L A Loeb, USA (Convenor): DNA polymerization and genomic instability.

S H Wilson, USA: G-U mismatch base excision repair in bovine testis nuclear extract.

T A Kunkel, USA: Studies of the fidelity of DNA replication by the human replication complex.

1.7 Oncogenes and Tumor Suppressor Genes - I

M R Das, INDIA (Convenor): Stimulation of histidine phosphorylation of a 38 kDa protein by Ras proteins.

T S Papas, USA: Oncogenes as probes for cellular signal processes: The family of ets genes.

T Sekiya, JAPAN: Accumulated aberrations of oncogenes and tumor suppressor genes in human cancers detected by PCR and SSCP analysis.

F Dautry, FRANCE: Expression and function of the Ras genes in mammalian cells.

C Marshall, UK: Regulation of intracellular signalling pathways by the Ras and Raf oncogenes.

Y K. Teddy-Fung, USA: Structural homology between the RB protein and the SV40 large T antigen.

2.6 Cell-Cell Communication

V Nanjundaiah, INDIA (Convenor) :

P C Newell, UK (Convenor): Role of cyclic GMP and calcium in signal transduction to cytoskeletal myosin

Y Anraku, JAPAN: Essential roles of Ca^{2+} / Ca^{2+} - binding proteins in the cell cycle of *Saccharomyces cerevisiae*.

M Whitaker, UK: Calcium signalling at fertilization and in early development.

M Charbonneau, USA: Changes in intracellular pH and intracellular free Ca^{2+} during egg activation and early embryonic cell division in *Xenopus*.

C Pears, USA: Structural studies on the protein kinase C gene family.

3.5 Genome Analysis

J Beckman, FRANCE (Convenor):

R F Doolittle, USA (Convenor):

J Srulston, UK:

K Rudd, USA:

P Slonimsky, FRANCE:

C Venter, USA:

4.1 Transgenic Plants and Productivity

D Pental, INDIA (Convenor): Yield enhancement in oilseed mustard and rapeseed by a combination of conventional and molecular methods of plant breeding.

N K Notani, INDIA (Convenor): Inheritable BAR DNA transfer to tobacco accompanied by its expression for herbicide resistance.

D J Ellar, UK: Structure and toxic mechanism of Bacillus thuringiensis: endotoxins and their insect receptors.

N Murata, JAPAN: Target genes that contribute to the tolerance toward temperature stresses.

I K Vasil, USA: The molecular genetic improvement of cereal crops.

G M Kishore, USA: Redirecting carbohydrate metabolism to enhance crop productivity.

4.2 Expression Systems

K Dharmalingam, INDIA (Convenor): Genome instability and gene expression in streptomyces

M D Summers, USA (Convenor):

S Hasnain, INDIA: Unusual regulation of the Baculovirus polyhedrin gene promoter.

K M Gautivk, NORWAY: Processing and cellular trafficking of recombinant human parathyroid hormone studied in microorganisms, insect and animal cells.

J McCafferty, UK: By-passing hybridomas and immunisation: Using libraries of antibodies expressed on bacteriophage.

T C Hall, USA: Importance of chromosomal integration in regulation of phaseolin gene expression.

5.4 Lipids in Health and Disease

S Basu, USA (Convenor): Pre- and post-transcriptional regulation of glycolipid glycosyltransferase.

G A Grabowski, USA (Convenor): Molecular biology of glycosphingolipid catabolic defect.

Y A Hannun, USA: Cerumide: A tumor suppressor lipid.

R N Kolesnick, USA: The sphingomyelin pathway mediates TNF and IL-1 action.

B Berra, ITALY: Human meningiomas: A model to correlate altered lipid metabolism to cell transformation.

Y Nagai, JAPAN: Galactoside binding and the regulation of cell growth and differentiation.

S Chatterjee, USA: Role of sphingolipids in cell proliferation: Its implications in atherosclerosis.

5.7 Molecular Basis of Genetic Diseases

J L Mandel, FRANCE:

B Vogelstein, USA:

Y Huei Wei, TAIWAN:

T Ozawa, JAPAN:

6.5 Cytokines in Health and Disease

U C Chaturvedi, INDIA (Convenor):

F E G Cox, UK: Cytokines in protozoan diseases.

B B Aggarwal, USA: Role of cytokines in normal and abnormal cell proliferation.

B Singh, CANADA: Modulation of autoimmunity by altering cytokine profile.

A K Mukhopadhyay, GERMANY: Cytokines and regulation of ovarian physiology.

R K Puri, USA: Role of interleukin-4 and its receptors in the immunotherapy of cancer.

7.5 Protein-Protein Recognition in the Formation and Function of Biological Polymers

B Bhattacharyya, INDIA (Convenor): Monomer-dimer equilibrium of tubulin: Structural and functional properties.

L Wilson, USA (Convenor): Microtubule polymerization dynamics: Kinetic stabilization by antimetabolic drugs.

P McLaughlin, UK: The structure of gelsolin segment 1: Actin complex.

M Rasenick, USA:

P Matsudaira, USA: The 3D structure of the sperm acrosomal process: How a new class of actin-binding proteins builds a crystalline bundle of actin filaments.

J Wolff, USA: Monomer/monomer and dimer/dimer interactions in tubulin.

E M Mandell, GERMANY: Structure and assembly of microtubules and microtubule-associated proteins.

8.5 Dietary Factors and Carcinogenesis

L Srinivas, INDIA (Convenor): Lipid peroxides as prooxidants and dietary factors as antioxidants.

M F Locniskar, USA: The role of dietary lipid in carcinogenesis.

H Mori, JAPAN: Chemopreventive effects of plant constituents and related synthetic chemicals on intestinal carcinogenesis in rodents.

B S Reddy, USA: Naturally occurring compounds in foods and their related synthetic analogues as anticancer agents.

M Ruchirawat, THAILAND: The influence of B vitamins on the mechanism of nitrosamine induced carcinogenesis.

SEPTEMBER 22, 1994 MORNING SESSION

1.3 DNA Replication and Repair

J Das, INDIA (Convenor): Methyl directed DNA mismatch repair in Vibrio cholerae.

M J Modak, USA (Convenor): Molecular insight into the structure and function analysis of enzymatic synthesis of DNA.

F Grosse, Germany: Nuclear DNA helicase II as paradigm for mammalian DNA and RNA unwinding enzymes.

S A Khan, USA: DNA-protein interactions during the initiation and termination of pT181 DNA replication.

L Kaguni, USA: Replication and evaluation of mitochondrial DNA: Role of DNA polymerase γ .

S Yoshida, Japan: Function regulation of eukaryotic DNA polymerase α -primase.

1.8 Gene Expression in Prokaryotes

J Gowrishankar, INDIA (Convenor): Osmotic regulation of proU operon expression in E. coli.

J Roth, USA (Convenor): Control and biological significance of the NAD cycle in Salmonella.

N P Higgins, USA: Regulation of flagellin expression in Salmonella typhimurium.

K T Hughes, USA: How bacteria regulate genes in response to the state of large structures - control by excretion of regulatory proteins.

A Das, USA: Mechanisms for regulation of mRNA termination in phage lambda.

R Kolter, USA: Control of gene expression during stationary phase of E.coli.

1.9 Protein Synthesis

N K Gupta, USA (Convenor): Regulatory roles of eIF-2 kinases and a 67 kDa protein in regulation of protein synthesis in animal cells.

U L RajBhandary, USA: Transfer RNA and initiation of protein synthesis.

M Grunberg-Manago, FRANCE: Mechanism of translational control in prokaryotes.

K H Nierhaus, GERMANY: Principles of protein synthesis in pro- and eukaryotes: Common motifs and differences.

N Sonenberg, CANADA (Convenor): Mechanisms of ribosome binding to eukaryotic mRNAs.

M B Mathews, USA: Regulation of protein synthesis by protein kinases.

1.10 Oncogenes and Tumor Suppressor Genes II

P Roy-Burman, USA (Convenor): Retroviral determinants for cell tropism, disease specificity, and proto-oncogene activation.

H zur Hausen, GERMANY: Molecular carcinogenesis of cancer of the Cervix.

Y Ikawa, JAPAN: P53-deficient mice: Early lymphoma development and epithelial cell immortality.

P N Tsichlis, USA: Progression of retrovirus-induced rodent T-cell lymphomas: Use of a genetic strategy to identify and characterize genes involved in the regulation of cell growth.

P K Reddy, USA:

C Basilico, USA: Regulation of expression and function of the FGF-4/K-FGF oncogene.

2.8 Extremophiles

R Maheshwari, INDIA (Convenor) :

S Shivaji, INDIA (Convenor): Molecular basis of adaptation to low temperature in Psychrotrophic bacteria from Antarctica.

D Desbruyeres, FRANCE: Deep-sea hydrothermal vent communities.

A A Yayanos, USA: Life at high pressures in the deep sea.

K Horikoshi, JAPAN :

3.7 Host-Virus Interaction

M S Shaila, INDIA (Convenor): Surface glycoproteins of pestes des petit ruminant virus: Role in cell attachment and cell fusion.

M Chakravorti, INDIA (Convenor): Bacteriophage MB78: Its interaction with permissive and non-permissive hosts.

A Lise-Haenni, FRANCE: Molecular elements of tymoviruses involved in virus multiplication in host plants.

M Levine, USA: Characterization of herpes simplex virus latency in the rat brain and ganglion.

N C Mandal, INDIA: Lethal interaction of the product of the replication gene P of bacteriophage lambda with its host Escherichia coli.

H L Nakhasi, USA: Molecular mechanism of viral pathogenesis: Role of RNA-protein interaction.

4.3 Drug Targeting

S K Basu, INDIA (Convenor):

S Olsnes, NORWAY (Convenor):

R J Youle, USA: Circumventing and diminishing the immunogenicity of immunotoxins.

J P Soullillou, FRANCE: Relevant targets in the use of monoclonal antibodies as immuno-suppressant in organ allograft recipients.

4.7 Impact of Biochemistry on Current Topics in Food Sciences

D Rajagopal Rao, INDIA (Convenor): Biochemistry and metabolic effect of natural food additives- A decade of research on spices.

J R Whitaker, USA (Convenor): Molecular tailoring of food enzymes to suit process needs.

D Boulter, UK: Molecular approaches to improve nutritional and functional properties of legume seed proteins.

S C Kinnamon, USA: Mechanisms of taste transduction.

S Pecore, USA: Functional properties and regulatory issues of fat replacers.

5.5 AIDS

A Burny, UK

P Clapham, UK

M Sundaram, INDIA

5.6 Environmental Toxins

P K Ray, INDIA (Convenor): Activation of host genes encoding biotransformation enzymes and lymphokines preventing toxicosis and oncogenesis induced by drugs and chemicals.

J Descotes, FRANCE (Convenor): Molecular mechanisms of immunotoxicity: Recent progress.

M V den Berg, NETHERLANDS: The use of biochemical markers for PCB and dioxin exposure in fish-eating bird species.

F Zucco, ITALY: Cytotoxic effects of environmental toxins studied in vitro by various cellular models.

A Taylor, UK: Exposure to trace elements from environmental sources.

A Benakis, SWITZERLAND: The in-vivo metabolic activation of chemicals producing toxic and cancerigenic agents.

1.11 Structure and Function of GTP Binding Proteins

B F C Clark, DENMARK (Convenor): The molecular switch of elongation factor EF-T U.

A Wittinghofer, GERMANY (Convenor): p21 and GAP proteins.

J C Lacal, SPAIN: Role of ras and rho GTPases in the regulation of cell proliferation.

Y Kaziro, JAPAN: Signalling pathways upstream and downstream of ras p21.

M Sprinzl, GERMANY: Elongation factors and their regulatory role in protein synthesis.

F McCormick, USA: Ras proteins in oncogenesis.

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1.6 Genes in Plant Growth and Development

A Datta, INDIA (Convenor): Molecular analysis of genes encoding Amaranthus seed specific protein and collybia oxalate decarboxylase to develop transgenic plants.

A K Mattoo, USA (Convenor): Gene regulation and structure-function relationships of ACC synthase, a key enzyme in the biosynthesis of plant hormone ethylene.

H Uchimiya, JAPAN : Molecular and cellular analysis of nucleotide kinase and GTP hydrolase in higher plants.

R G Herrmann, GERMANY:

A Sturm, SWITZERLAND: Molecular characterization and possible roles of acid β -fructosidases and sucrose synthase from carrot.

L Willmitzer, GERMANY: Characterization of plant genes involved in basic developmental processes identified by insertion mutagenesis.

2.7 Molecular Basis of Evolution

J Barnabas, INDIA (Convenor): Population mitochondrial DNA variation among Indians.

M Goodman, USA (Convenor):

G Bernardi, France: The isochore organization of the human genome and its evolutionary history.

T Ohta, JAPAN: Evolutionary mechanisms through gene study.

C Saccone, ITALY: Evolutionary patterns of mammalian mitochondrial DNA.

G H Dixon, CANADA: Sperm protamine as rapidly evolving evolution indicators.

3.6 Viral Assembly and Structure

M R N Murthy, INDIA (Convenor): Structure of sesbania mosaic virus.

D Stuart, UK (Convenor):

T Tsukihara, JAPAN: Structure of a double-shelled virus.

N L Incardona, USA: Phage X174: Model for the link between virus assembly and genome delivery.

L Liljas, SWEDEN: Structure and assembly of small RNA phages.

D L D Caspar, USA: Switching mechanisms in virus self-assembly.

3.8 Spectroscopy Methods in Biomolecular Structure and Interactions

D Balasubramanian, INDIA (Convenor):

A Gronenborn, USA (Convenor): Multidimensional heteronuclear NMR of proteins.

D A Jovin, GERMANY:

M Barkley, USA: Tryptophan fluorescence as a structural probe in peptides and proteins.

G Sanyal, USA: FTIR spectroscopy as a structural probe for protein pharmaceuticals: Scope and limitations.

T Kitagawa, JAPAN:

4.4 Gene Therapy

I M Verma, USA (Convenor): Gene therapy for hemophilia.

M L Birnstiel, AUSTRIA (Convenor): Somatic gene therapy for cancer: The generation of tumor vaccines by transferrin infection of cytokine genes into tumor cells.

F H Gage, USA: Gene transfer in the CNS.

S L C Woo, USA:

O F Danos, FRANCE: Delivery of therapeutic proteins by autologous implants of genetically-modified fibroblasts.

M Perricaudet, FRANCE: Adenovirus vectors for gene therapy.

K Yagi, JAPAN: Gene therapy by means of liposomes.

4.6 Rational Drug Design

S T Crooke, USA (Convenor): Rational design of oligonucleotide-based drugs.

L M Kruse, USA (Convenor): Strategy and serendipity in the design of novel therapeutics.

D J Kyle USA: Invoking structural biology as an approach toward the design of non-peptide bradykinin receptor antagonists.

P C Weber, USA: Structure-based design of inhibitors of the serine protease, thrombin.

5.8 Enteric Diseases

A Bhattacharya, INDIA (Convenor): Lipophosphoglycan of Entamoeba histolytica.

T Nash, USA (Convenor): Antigenic variation in Giardia lamblia.

C A Lingwood, CANADA :

F Schodel, GERMANY:

T Takeuchi, JAPAN: Molecular biology of Entamoeba histolytica.

G W Both, AUSTRALIA: Vaccination against rotaviruses using recombinant viral vectors and a novel antigen, VP7sc.

7.6 Intracellular Targeting of Proteins

R Nagaraj, INDIA (Convenor): Mechanism of initiation of translocation across or membrane by signal sequences: Is the end of the tunnel really in sight?

E C Hurt, GERMANY (Convenor): A genetic and biochemical study of the nuclear pore complex in yeast.

G Schatz, SWITZERLAND: Import and degradation of mitochondrial proteins.

W H Kanau, GERMANY: Peroxisome biogenesis: A new paradigm for intracellular protein sorting.

G von Heijne, SWEDEN: Interactions between nascent polypeptides and the ER translocase studied by glycosylation mapping.

K U Kalies, GERMANY: Ribosome receptors and mechanism of protein translocation across the ER-membrane.

11.5 Protein-Sugar Interactions in Molecular and Cellular Recognition

A Surolia, INDIA (Convenor): Exploring the molecular features of protein-sugar recognitions.

C G Gahmberg, FINLAND (Convenor): Leukocyte cell surface carbohydrate in adhesion and recognition.

C F Brewer, USA: Structural studies on lectin-carbohydrate interactions.

E A Davidson, USA: The role of carbohydrate in the invasion of the erythrocyte by the malaria parasite.

H L Kornberg, UK: Uptake of glucose and fructose by Escherichia coli.

K Drickamer, USA: Molecular mechanisms of complex carbohydrate

recognition by animal lectins.

P M Wassarman, USA: Carbohydrate mediated sperm egg interactions during fertilization in mammals.

12.1 Problem Based Learning in Biochemistry

A S Kolaskar, INDIA (Convenor):

F Vella, CANADA (Convenor): Why problem based learning in biochemistry .

N V Bhagavan, USA: Learning biochemistry in the context of solving clinical problems.

W Gevers, SOUTH AFRICA: From the past to the present: exploration of meaning through an historical approach to a topic.

E J Wood, UK: Problems of problem-based learning.
